

**UNITED STATES DISTRICT COURT
FOR THE
DISTRICT OF SOUTH CAROLINA – GREENVILLE**

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LARRY GOLDEN,

Plaintiff,

V.

GOOGLE LLC

Defendants.

CIVIL CASE NO: _____

JURY TRIAL DEMANDED

January 25, 2021

COMPLAINT FOR PATENT INFRINGEMENT

This is an action of patent infringement in which plaintiff, Larry Golden (“Golden”, “Plaintiff” or “Patent Owner”), hereby asserts the following claims for patent infringement of United States Patent Nos. 10,163,287 (‘287 Patent), 9,589,439 (‘439 Patent), and 9,096,189 (‘189 Patent) (“patents-in-suit”: attached hereto as Exhibits A-C respectively) against Defendant GOOGLE LLC (“Google” or “Defendant”), and alleges as follows:

Upon information and belief, Plaintiff alleges the patents-in-suit, that were issued with the presumption of validity, “[a] patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. 35 U.S. Code § 282 - Presumption of validity; (a)

In General” is Plaintiff’s evidence that the Plaintiff is the inventor of the Communicating, Monitoring, Detecting, and Controlling (CMDC) device(s) i.e., products grouped and commercialized today as smartphones, laptops, tablets, smartwatches, etc.

Upon information and belief, Plaintiff alleges that the defendant Google, has in the past and continues to do so, makes, uses, offer to sell, or sells Google Pixel smartphones 3, 3XL, 3a, 3aXL, 4a, 4a(5G), and 5, that Plaintiff believes infringes at least one of the claims in the patents-in-suit under 35 U.S.C. § 271, “anyone who makes, uses, offers to sell, or sells any patented invention domestically, or imports a patented invention into the United States during the term of the patent, is infringing the patent. Anyone who actively induces someone else to infringe the patent is also liable as an infringer.”

Similarly, under 35 U.S.C. § 271, “anyone who offers to sell, sells, or imports a material component of something that is patented, knowing that the component was especially made for use in an infringement and is not a commodity suitable for a substantial non-infringing use, is also liable as a contributory infringer” Plaintiff is alleging that the defendant Google, has in the past and continues to do so, offer to sell, sells (i.e., to other smartphone and mobile device manufacturers; “Google Search”, “Google Fi”, “Google Android Operating Systems”, “Google Cloud”, etc.) or imports a material component of something that is patented (i.e., Plaintiff’s CMDC devices). For example, “market.us” has published the following information on Google:

2018?

- On January 2018, Alphabet, Inc. acquired Redux – smartphone technology, which is specialized in turning smartphone screens into speakers.
- In October 2018, Google LLC to shut down Google+ after failing to disclose user data leak
- In November 2018, Google LLC acquired Workbench, which is a US-based company, that offers an online library of projects and lessons.

- Under this acquisition, the company focuses on integrating the Workbench tool with Google Classroom. In addition, currently, Google Classroom is one of the most widely used online educational tools, which lets parents, teachers, and students manage class discussions, assignments, and quizzes.
- In 2018, Google Search and Advertising tools helped generating **\$335 billion** in economic activity for **more than 1.3 billion millions** of businesses, website publishers, and nonprofits across the United States.
- Many website publishers, non-profit organizations and 40,000 companies in the country benefited from the use of Google Ads and AdSense advertising tools.
- In 2018, Google had sent more than 14 billion dollars to music publishers around the world.
- As of November, 2018, in US, Google connects people to businesses nearby more than **9 billion times**, including over 1 billion phone calls and 3 billion direction requests to stores every month.

Usage Statistics

- In a minute on the Internet in 2020, there are **4.1 million search queries, 230 million per hour** and **6 Billion per day** that is **more than 2.5 Trillion searches per year** worldwide.
- Till July 2020, Google has 95.6% share of worldwide mobile search traffic.
- In April 2020, Google processed **12.7 billion** search queries in US, accounting **62.3 percent** of the US total desktop search queries and leading mobile search provider in the US with 95.04% market share
- Daily visitors to Google are **approximately 620 Mn.**
- According to the Datareportal, in June 2020, the top 10 search queries on Google were: Google, Facebook, Youtube, You, Weather, News, Amazon, Coronavirus, Translate and Instagram.
- In July 2019, Google accounted for **95 percent** of US mobile search visits and **93 percent** of overall U.S. organic search engine visits.
- As of May 2019, Gmail is a product that **1.5 billion users** rely on, to get things done every day.
- As of September 2019, People have already asked **Google Lens more than a billion questions** about things they see.

- Google sends **10 billion+ clicks per month** to news publishers' websites.
- As of May 2019, **2.5 million** web publishers use AdSense to make money through their content on the web.
- According to a survey, in Europe the news content linked through Google were **clicked more than 8 billion times a month** that is **3,000 clicks per second** to the publishers' websites in Europe resulting to each click between 4-6 euro cents.
- In the US, Google helps drive over **1 billion direct connections**, like calls and online reservations, for businesses nationwide every month.
- Google owns its **own common misspellings domains** such as www.gooogle.com, www.googlr.com, and www.gogle.com
- Google runs **over 1 Mn computer servers** in data centers around the world.
- Last year, Google **rejected more than 10 million ads** that we suspected of copyright infringement.
- Around **35% of clicks** for U.S. businesses, advertising on Google, came from outside the country.
- As of May 2019, about **80% of traffic** from Google's Showcase Shopping ads to retailer sites are from new visitors discovering the brands.
- Till date, Google has over **2 billion store** offers mapped to physical store locations globally, discoverable by their current local ad formats like local inventory ads.
- Google Station serves more than **10 million people in 1,300 locations** across India, Indonesia, Mexico, Nigeria, the Philippines, Thailand, Vietnam and Brazil.
- Google Assistant is now on **more than one billion devices**, available in more than 30 languages across 80 countries.
- As of 2019, **more than 20 million people visit Google Account every day** to review their settings, using Privacy Checkup.
- As of 2019, **90 million** teachers and students are using G Suite for Education worldwide.
- Google has a database of over 4 billion credentials that have been compromised through various data breaches
- According to a 2018 Survey, around **72% of consumers in Indonesia** see Google Search as the online gateway for personal loan information and the second most helpful source for Financial Services information, after the bank branches

THE PARTIES

1. Plaintiff Larry Golden is a citizen of South Carolina and has a principal place of business and residence at 740 Woodruff Road, #1102, Greenville, S.C. 29607.

2. On information and belief, Google is incorporated in the State of Delaware with a principal place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043 and does business in this judicial district by, among other things, committing jointly, directly, and/or indirectly the tort of literal patent infringement or infringement under the “doctrine of equivalents” giving rise to this complaint. Google may be served at its principal place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043.

3. Google LLC is one of the largest technology companies in the world and conducts product sales, and online search operations in the District of South Carolina. Google LLC directly and/or indirectly distributes, markets, offers to sell, sells, and/or imports the infringing Google Pixel Series of smartphones and Google Android Operating Systems.

STANDARD FOR REVIEW

4. Pursuant to the order of Magistrate Judge Kevin McDonald in United States District Court for the District of South Carolina; filed 12/17/2020; Case No. 6:20-cv-04353-BHH-KFM, Plaintiff was ordered to file “a short and plain statement of the claim showing that the pleader [Plaintiff] is entitled to relief.” Fed. R. Civ. P. 8(a).

5. Plaintiff has attached a copy of the asserted patents as **Exhibits A, B, & C**. The attached patents satisfy the requirement of “enough factual allegations. For example, in *Incom Corp. v. Walt Disney Co.*, No. 2:15-cv-03011-PSG-MRW, Dkt. 39, at *4 (C.D. Cal. Feb. 4, 2016) the Central District of California declined to dismiss a complaint that attached the asserted

patent, identified the accused products by name, and generally compared the technology disclosed in the patents to the accused products. The complaint *did not identify any specific asserted claim*, but the court found that: “Plaintiff has stated a plausible claim for direct infringement by specifically identifying the Defendant’s products and alleging that they perform the same unique function as Plaintiff’s patented system.” The Defendant in this case is allegedly liable for infringement of the asserted patents-in-suit under 35 U.S.C. § 271.

6. Plaintiff maintains he has additional factual allegations to support his claim in the form claim charts readily available by order of this Court.

JURISDICTION AND VENUE

7. This is a civil action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331, 1332(a) and 1338(a).

8. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(c) and 1400(b). On information and belief, the defendant has purposely transacted business in this judicial district and has committed acts of joint, direct and/or indirect infringement in this judicial district.

9. On information and belief, the defendant is subject to this Court’s specific and general personal jurisdiction, due at least to the defendant’s substantial business in this forum, including: (A) at least part of the defendant’s infringing activities alleged herein, and (B) regularly doing or soliciting business, engaging in others persistent causes of conduct, and/or deriving substantial revenue from goods and services provided to persons and other entities in

South Carolina and this judicial district. The defendant has allegedly used, sold, and/or offered products for sale in South Carolina and is licensed to do business in this state.

10. This Court has specific jurisdiction over the defendant because the defendant has committed acts giving rise to this action and has established minimum contacts within this judicial district such that the exercise of jurisdiction over the defendant would not offend traditional notions of fair play and justice.

RELATED CASES

11. Plaintiff has alleged that Apple is infringing Plaintiff's communicating, monitoring, detecting, and controlling (CMDC) device in a related case *Larry Golden v. Apple, Inc. et al* filed on 12/16/2020 at the United States District Court for the District of South Carolina; Greenville Division (Case No. 6:20-cv-04353) against defendants, Apple Inc. ("Apple"), Samsung Electronics, USA ("Samsung"), LG Electronics, USA, Inc. ("LG"), Qualcomm Inc. ("Qualcomm"), Motorola Solutions Inc. ("Motorola"), Panasonic Corporation ("Panasonic"), AT&T Inc. ("AT&T"), Verizon Corporation Services Group ("Verizon"), Sprint Corporation ("Sprint"), T-Mobile USA, Inc. ("T-Mobile"), Ford Global Technologies, LLC ("Ford"), Fairway Ford Lincoln of Greenville ("Fairway Ford"), General Motors Company ("GM"), Kevin Whitaker Chevrolet ("Whitaker Chevrolet"), FCA US LLC ("FCA"), and Big O Dodge Chrysler Jeep Ram ("Big O").

12. Plaintiff has filed an action of Antitrust Law violations *Larry Golden v. Apple, Inc. et al* on June 16, 2020, at the United States District Court for the District of South Carolina; Greenville Division (Case No. 6:20-cv-02270) against defendants, Apple Inc. ("Apple"), Samsung Electronics, USA ("Samsung"), LG Electronics, USA, Inc. ("LG"), Qualcomm Inc.

(“Qualcomm”), Ford Global Technologies, LLC (“Ford”), General Motors Company (“GM”), and, FCA US LLC (“FCA”).

GOOGLE SMARTPHONE SPECIFICATIONS / ANDROID PLATFORM

13. Upon information and belief, Google is directly infringing Plaintiff’s patented CMDC devices by making, using, offering for sale, selling and/or importing the aforementioned alleged infringing devices that have at a minimum, directly infringed Plaintiff’s ‘287, ‘439, and ‘189 patents. to unjustly enrich itself.

14. Upon information and belief, Google is jointly infringing Plaintiff’s patented CMDC devices by offering for use, using, offering for sale, selling and/or importing as essential, Google’s Android platform for use with Google’s smartphones, and other Android smartphone devices i.e., Samsung, LG, Motorola, etc., that have at a minimum, directly infringed Plaintiff’s ‘287, ‘439, and ‘189 patents. Android smartphones have permanent default Google-owned apps like Google search, Google Play, YouTube, Maps etc. The main Android framework is signed in through a Google account too. So, you need to have a Google account to use Android.

15. The smartphone has come a long way since the first iPhone launched in 2007. While Apple’s iOS is arguably the world’s first smartphone operating system, Google’s Android is by far the most popular. Android has evolved significantly since first being released on an HTC-made T-Mobile device in 2008.

16. It wasn’t until 2005 that Google purchased Android, Inc., and while there wasn’t much info about Android at the time, many took it as a signal that Google would use the platform to enter the phone business. Eventually, Google did enter the smartphone business — but not as a hardware manufacturer. Instead, it marketed Android to other manufacturers, first

catching the eye of HTC, which used the platform for the first Android phone, the HTC Dream, in 2008.

17. Upon information and belief, Google has copied the “product grouping” strategy of the Plaintiff (Golden) for a communicating, monitoring, detecting, and controlling (CMDC) device, i.e., Google’s smartphone products are grouped together by “common features of design similarities”. As illustrated below, Google’s smartphones are basically the same.

18. Therefore, when analyzing the specifications, features, and functionality of Google’s smartphones as a complete product, and not merely identifying the individual infringing processes; there is a strong likelihood that if one of Google’s smartphones infringes Plaintiff’s claimed invention of a CMDC device; it can be perceived that all of Google’s smartphones infringes Plaintiff’s claimed invention of a CMDC device as a ‘whole’ product.

GOOGLE PIXEL 5 VS. PIXEL 4A WITH 5G VS. PIXEL 4

Category	Pixel 5	Pixel 4A with 5G	Pixel 4A
Network	5G	5G	4G
Screen	6-inch flexible OLED display at 432 ppi	6.2-inch OLED display at 413 ppi	5.8-inch OLED display at 443 ppi
Refresh Rate	90 Hz	60 Hz	60 Hz
Resolution	1080 x 2340	1080 x 2340	1080 x 2340
Battery	4080 mAh	3885 mAh	3140 mAh
Front Camera	8 megapixels	8 megapixels	8 megapixels
Rear Camera	12.2-megapixel dual-pixel (16-megapixel ultrawide)	12.2-megapixel dual-pixel (16-megapixel ultrawide)	12.2-megapixel dual-pixel
Camera Features	Night Sight, Portrait Light, Cinematic Pan, Live HDR+	Night Sight, Portrait Light, Cinematic Pan, Live HDR+	Night Sight, Live HDR+
RAM	8GB	6GB	6GB

Category	Pixel 5	Pixel 4A with 5G	Pixel 4A
Processor	Qualcomm Snapdragon 765G	Qualcomm Snapdragon 765G	Qualcomm Snapdragon 730G
Storage	128GB	128GB	128GB
Audio	Stereo speakers, USB-C audio	Stereo speakers, USB-C audio, 3.5mm headphone jack	USB-C audio, 3.5mm headphone jack
Price	\$699	\$499	\$349
Wireless Charging	Yes	No	No
Water Resistant	Yes	No	No
Colors	Green, Black	White, Black	Black
Operating System	Pre-loaded with Android 11	Pre-loaded with Android 11	Pre-loaded with Android 10

GOOGLE PIXEL 3 SERIES SPEC COMPARISON

Specification	Pixel 3A	Pixel 3A XL	Pixel 3	Pixel 3 XL
Display	5.6 inches	6.0 inches	5.5 inches	6.3 inches
Resolution	2220 x 1080	2160 x 1080	2160 x 1080	2960 x 1440
Processor	Snapdragon 670 (2.0GHz and 1.7GHz, octa-core)	Snapdragon 670 (2.0GHz and 1.7GHz, octa-core)	Snapdragon 845 (2.5GHz and 1.6GHz, octa-core)	Snapdragon 845 (2.5GHz and 1.6GHz, octa-core)
RAM	4GB	4GB	4GB	4GB
Storage	64GB	64GB	64GB, 128GB	64GB, 128GB
Rear camera	12 megapixels	12 megapixels	12 megapixels	12 megapixels
Front camera	8 megapixels	8 megapixels	8 megapixels, 8 megapixels(wide)	8 megapixels, 8 megapixels(wide)

Specification	Pixel 3A	Pixel 3A XL	Pixel 3	Pixel 3 XL
Battery	3,000mAh	3,700mAh	2,915mAh	3,430mAh
Water protection	N/A	N/A	IPX8	IPX8
Wireless charging?	No	No	Yes	Yes
Ports?	USB-C, 3.5mm headphone jack	USB-C, 3.5mm headphone jack	USB-C	USB-C
Weight	0.32 pounds	0.37 pounds	0.33 pounds	0.4 pounds
Dimensions (in.)	6.0 x 2.80 x 0.30	6.30 x 3.00 x 0.30	5.70 x 2.70 x 0.30	6.20 x 3.00 x 0.30
Starting price	\$399.00	\$479.00	\$799.00	\$899.00
Operating System	Pre-loaded Android	Pre-loaded Android	Pre-loaded Android	Pre-loaded Android

SENSOR TYPES SUPPORTED BY THE “*ANDROID*” PLATFORM

Type Accelerometer	Hardware	Measures the acceleration force in m/s^2 that is applied to a device on all three physical axes (x, y, and z), including the force of gravity.	Motion detection (shake, tilt, etc.).
Type Ambient Temperature	Hardware	Measures the ambient room temperature in degrees Celsius ($^{\circ}C$). See note below.	Monitoring air temperatures.
Type Gravity	Software or Hardware	Measures the force of gravity in m/s^2 that is applied to a device on all three physical axes (x, y, z).	Motion detection (shake, tilt, etc.).
Type Gyroscope	Hardware	Measures a device's rate of rotation in rad/s around each of the three physical axes (x, y, and z).	Rotation detection (spin, turn, etc.).
Type Light	Hardware	Measures the ambient light level (illumination) in lx.	Controlling screen brightness.

Type Linear Acceleration	Software or Hardware	Measures the acceleration force in m/s ² that is applied to a device on all three physical axes (x, y, and z), excluding the force of gravity.	Monitoring acceleration along a single axis.
Type Magnetic Field	Hardware	Measures the ambient geomagnetic field for all three physical axes (x, y, z) in μ T.	Creating a compass.
Type Orientation	Software	Measures degrees of rotation that a device makes around all three physical axes (x, y, z). As of API level 3 you can obtain the inclination matrix and rotation matrix for a device by using the gravity sensor and the geomagnetic field sensor in conjunction with the get Rotation Matric () method.	Determining device position.
Type Pressure	Hardware	Measures the ambient air pressure in hPa or mbar.	Monitoring air pressure changes.
Type Proximity	Hardware	Measures the proximity of an object in cm relative to the view screen of a device. This sensor is typically used to determine whether a handset is being held up to a person's ear.	Phone position during a call.
Type Relative Humidity	Hardware	Measures the relative ambient humidity in percent (%).	Monitoring dewpoint, absolute, and relative humidity.
Type Rotation Vector	Software or Hardware	Measures the orientation of a device by providing the three elements of the device's rotation vector.	Motion detection and rotation detection.
Type Temperature	Hardware	Measures the temperature of the device in degrees Celsius ($^{\circ}$ C). This sensor implementation varies across devices and this sensor was replaced with the Type—Ambient Temperature sensor in API Level 14	Monitoring temperatures.

- ❖ **BIOMETRICS:** Biometric factors allow for secure authentication on the Android platform. The Android framework includes face and fingerprint biometric authentication. Android can be customized to support other forms of biometric authentication (such as Iris).
- ❖ **DISABLING LOCK MECHANISM:** Google's Android operating system features a lock mechanism to secure your phone, known as pattern lock. When setting the pattern, you must drag your finger along lines on the screen between different nodes. Afterward, to unlock the phone, you'll need to replicate the pattern drawn. If you fail to solve the

pattern too many times, the phone locks and cannot be unlocked without logging into the associated Google account. If you can't log in, you'll have to employ some other methods to restore control of your phone.

- ❖ **CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN) DETECTION:** Through collaboration and innovation, the Defense Threat Reduction Agency has integrated its powerful, hazard-awareness-and-response tools into the *Android Tactical Assault Kit (or the Android Team Awareness Kit, ATAK)*. ATAK is a digital application available to warfighters throughout the DoD. Built on the Android operating system, ATAK offers warfighters geospatial mapping for situational awareness during combat — on an end-user device such as a smartphone or a tablet. With DTRA's contribution, ATAK now includes chemical, biological, radiological, and nuclear (CBRN) plug-ins.
 - ❖ **HEART RATE:** *Android Team Awareness Kit, ATAK* provides a single interface for viewing and controlling different CBRN-sensing technologies, whether that is a wearable smartwatch that measures a warfighter's vitals (e.g., heart rate) or a device mounted on a drone to detect chemical warfare agents.
 - ❖ **NEAR FIELD COMMUNICATION (NFC):** Pixel™, Phone by Google - Turn NFC on/off. Near Field Communication (NFC) allows the transfer of data between devices that are a few centimeters apart, typically back-to-back. NFC must be turned on for NFC-based apps (e.g., Tap to Pay) to function correctly. NFC is a set of short-range wireless technologies, typically requiring a distance of 4cm or less to initiate a connection. NFC allows you to share small payloads of data between an NFC tag and an Android-powered device, or between two Android-powered devices. Tags can range in complexity.
 - ❖ **WARFIGHTERS:** The U.S. armed forces and their interagency and coalition partners value *Android Team Awareness Kit, ATAK* and the common operating picture it provides. DTRA continues to develop CBRN-specific plug-in capabilities to support warfighters on the battlefield.
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GOOGLE'S JOINT INFRINGEMENT WITH APPLE INC.

19. According to Gurman, 2020, "The U.S. government's antitrust assault against Google reveals new details about a secretive, multibillion-dollar deal between the internet giant and Apple Inc., the world's largest technology company. The Justice Department's lawsuit, filed Tuesday, targets paid deals Google negotiates to get its search engine to be the default on browsers, phones and other devices. The biggest of these is an agreement that makes Google search the default on iPhones and other Apple devices."

20. The U.S. government said Apple Chief Executive Officer Tim Cook and Google CEO Sundar Pichai met in 2018 to discuss the deal. After that, an unidentified senior Apple employee wrote to a Google counterpart that “our vision is that we work as if we are one company.”

21. The DOJ also cited internal Google documents that call the Apple search deal a “significant revenue channel” for the search giant and one that, if lost, would result in a “Code Red” scenario. That’s because nearly half of Google search traffic in 2019 came from Apple products, according to the lawsuit.

22. Google pays Apple billions of dollars a year to make its search product the default option, according to analyst estimates. That means when a user buys a new iPhone or other Apple device, the built-in search engine in the Safari browser is Google.

23. The DOJ suit cited estimates that Apple gets \$8 billion to \$12 billion annually from Google through the agreement. Apple’s income from the search deal is believed to be part of the company’s growing Services segment, a key metric Apple has highlighted to investors and analysts in recent years.

Gurman, Mark (2020, Oct. 20). *Apple, Google worked as ‘one company’ on search deal, U.S. says*. <https://www.bloomberg.com/news/articles/2020-10-20/apple-google-worked-as-one-company-on-search-deal-u-s-says>

Joint Infringement

24. Upon information and belief, Google and Apple are jointly infringing Plaintiff’s patented CMDC devices by offering for use, using, offering for sale, selling and/or importing as essential, Google’s Search for use with Google and Apple smartphones, that have at a minimum, directly infringed independent claims 1, 2, and 3 of the ‘189 patent; independent claims 13, 14, 15, and 23 of the ‘439 patent; and, independent claims 4, 5, and 6 of the ‘287 patent.

25. Plaintiff has alleged that Apple is infringing Plaintiff's communicating, monitoring, detecting, and controlling (CMDC) device in a related case *Larry Golden v. Apple, Inc. et al* filed on 12/16/2020 at the United States District Court for the District of South Carolina; Greenville Division (Case No. 6:20-cv-04353) against defendants, Apple Inc. et al.

26. Plaintiff has also filed a case *Larry Golden v. Apple, Inc. et al* on 06/16/2020 at the United States District Court for the District of South Carolina; Greenville Division (Case No. 6:20-cv-02270) against defendants, Apple Inc. et al. for Antitrust Law Violations.

GOOGLE'S JOINT INFRINGEMENT WITH QUALCOMM INC.

27. According to a Qualcomm press release (2020), "Qualcomm Technologies, Inc. and Google announced their collaboration to enhance and extend Project Treble with the goal of enabling more devices with Qualcomm® Snapdragon™ mobile platforms to run the latest Android OS. The enhancements are intended to enable Original Equipment Manufacturers (OEMs) to upgrade their Snapdragon based devices to the latest Android OS without modifying Qualcomm Technologies' chipset-specific software and to use a common Android software branch to upgrade devices based on a wide range of Snapdragon mobile platforms across Qualcomm Technologies' portfolio. These enhancements are designed to reduce the time and resources required to upgrade Snapdragon based devices to the latest Android OS version."

28. As part of this collaboration with Google, Qualcomm Technologies will now support four Android OS versions and four years of security updates for all Snapdragon platforms utilizing the Project Treble enhancements, starting with the new Snapdragon 888 Mobile Platform. These initiatives are designed to enable faster Android OS upgrades with fewer resources and a predictable software lifecycle for Snapdragon based devices, which together are

expected to result in more consumers with Snapdragon based devices running the latest Android OS version.

29. “Google continues to work closely with our technology partners to increase the freshness of the Android ecosystem. Through this collaboration with Qualcomm Technologies, we expect that Android users will have the latest OS upgrades and greater security on their devices,” said David Burke, vice president of Android engineering, Google.

30. “We are excited to work with Google to extend our support for Android OS and security updates on future Snapdragon mobile platforms utilizing the Project Treble enhancements,” said Kedar Kondap, vice president, product management, Qualcomm Technologies, Inc.

Terminology

- Google’s android operating system; same as “operating system”.
- Google’s android operating system; same as “computer program”.
- Google’s android operating system; same as “software”.
- Qualcomm’s chipset; used interchangeably as “processor”.
- Qualcomm’s chipset; used interchangeably as “central processing unit”.
- Qualcomm’s chipset; used interchangeably as “wireless technology” (WiFi, 3G, 4G, 5G, LTE, and so on).

31. An operating system is a computer program, works as interface between user and hardware and provides common services for computer programs. The entire process or functionality of computer system depends on the operating system. An operating system is a computer program that controls the execution of application programs and acts as an interface between the user of a computer and the computer hardware. The purpose of an operating system

is to provide an environment in which a user can execute programs in a convenient and efficient manner. <https://www.geeksforgeeks.org/introduction-of-operating-system-set-1/>

32. A Central Processing Unit (CPU) is a machine that can execute computer programs. This broad definition can easily be applied to many early computers that existed long before the term "CPU" ever came into widespread usage. The term itself and its initialism have been in use in the computer industry at least since the early 1960s (Weik 1961). The form, design and implementation of CPUs have changed dramatically since the earliest examples, but their fundamental operation has remained much the same.

33. An Operating System is the core software that allows applications to interface with the hardware. Operating Systems control the specific details of your system, presenting a more manageable interface for applications (and the user) to make use of. To use an analogy, the CPU is the brain, the OS is the mind. The mind cannot exist without a brain to store it, and the brain is just a useless lump without a mind to control it.

<https://answers.yahoo.com/question/index?qid=20090927101607AAiAJ42>

34. An SoC, or system-on-a-chip to give its full name, integrates almost all of these components into a single silicon chip. Along with a CPU, an SoC usually contains a GPU (a graphics processor), memory, USB controller, power management circuits, and wireless radios (WiFi, 3G, 4G LTE, and so on). Whereas a CPU cannot function without dozens of other chips, it's possible to build complete computers with just a single SoC. The number one advantage of an SoC is its size: An SoC is only a little bit larger than a CPU, and yet it contains a lot more functionality. If you use a CPU, it's very hard to make a computer that's smaller than 10cm (4 inches) squared, purely because of the number of individual chips that you need to squeeze in. Using SoCs, we can put complete computers in smartphones and tablets, and still have plenty of

space for batteries. <https://www.extremetech.com/computing/126235-soc-vs-cpu-the-battle-for-the-future-of-computing>.

Joint Infringement

35. Upon information and belief, Google and Qualcomm are jointly infringing Plaintiff's patented CMDC devices by offering for use, using, offering for sale, selling and/or importing as essential, Google's Android platform for use with Qualcomm's SoCs, CPUs, etc. for smartphones that have at a minimum, directly infringed independent claims 1, 2, and 3 of the '189 patent; independent claims 13, 14, 15, and 23 of the '439 patent; and, independent claims 4, 5, and 6 of the '287 patent.

36. Google developing its own phone processor would mean dumping the Qualcomm SoCs it usually uses. Of course, you can never truly be rid of Qualcomm: Google would presumably still need to use Qualcomm modems, something that even Apple still needs to do. There are other modem manufacturers out there—Samsung, Huawei, Mediatek—but Qualcomm's combination of patents and strong-arm licensing techniques has effectively locked its competitors out of the US and other markets.

37. Plaintiff has alleged that Qualcomm is infringing Plaintiff's communicating, monitoring, detecting, and controlling (CMDC) device in a related case *Larry Golden v. Apple, Inc. et al.* filed on 12/16/2020 at the United States District Court for the District of South Carolina; Greenville Division (Case No. 6:20-cv-04353) against defendants, *Apple Inc. et al.*

38. Plaintiff has also filed a case *Larry Golden v. Apple, Inc. et al* on 06/16/2020 at the United States District Court for the District of South Carolina; Greenville Division (Case No. 6:20-cv-02270) against defendants, *Apple Inc. et al.* for Antitrust Law Violations.

CLAIM CONSTRUCTION

“Inter Partes Review (IPR): Department of Homeland Security vs. Larry Golden; Case No.: IPR2014-00454 (Patent RE43,990; Claims 11, 74, & 81); Final Written Decision entered on October 1, 2015. “In the ‘Decision to Institute’, we construed certain claim terms. Those constructions are reproduced in the chart below:

Claim Term	Construction
“built in, embedded” (claim 74)	“something is included within, incorporated into, disposed within, affixed to, connected to, or mounted to another device, such that it is an integral part of the device”
“communication device” (claim 81)	“monitoring equipment”

Dec. to Inst. 11-16

39. “No party challenges these constructions. Both of these terms were modified or removed in the amendment. To the extent that any of these constructions remain relevant after the amendment, we see no reason to modify them... [w]e further determined that no explicit construction was necessary for any other claim terms. Dec. to Inst. 10-11. Based on the record adduces during trial, we see no need to construe any other terms...”

40. “Beginning with the claim preamble amendment, the preamble of claim 11 originally read: “A communication device of at least one of *a cell phone, a smart phone, a desktop, a handheld, a PDA, a laptop, or a computer terminal at a monitoring site* for monitoring products for communication therebetween, comprising....” In claim 154, the language in italics has been eliminated and replaced with “the products grouped together by common features in the product grouping category of design similarity (e.g., computer terminal, personal computer (PC)) ...” Patent Owner contends that this new language is consistent with

words found in the disclosure of the ‘118 application. Mot. To Amend 4. Patent Owner further contends that this new language is broad enough to include the removed items, such as cell phones and smart phones, because those items are “species terms” that are “included in the genus ‘monitoring equipment’ and ‘communication device’ when the clause ‘products grouped together by common features in the product groupings category of design similarity’ is included.” *Id.* Patent Owner argues that “[t]he specific devices removed, such as the cell phones and smart phones would be recognized by one of ordinary skill in the art as a type of communication device or monitoring equipment because cell phones and smartphones are devices that are capable of communication and are capable of receiving signals.” “*Inter Partes Review (IPR): Department of Homeland Security vs. Larry Golden*; Case No.: IPR2014-00454 (Patent RE43,990; Claims 11, 74, & 81); Final Written Decision entered on October 1, 2015.

COUNT I

(Infringement of the ‘287 Patent)

41. Golden realleges and incorporates herein the allegations set forth in Paragraphs 1-40.

42. On information and belief, Google is jointly, directly, indirectly and/or under the ‘doctrine of equivalents’, infringing at least independent claims 4, 5, and 6 of the ‘287 patent. The alleged infringing products are: Google Pixel smartphones 3, 3XL, 3a, 3aXL, 4a, 4a(5G), and 5.

43. As set forth in Golden’s preliminary infringement contentions that Google is making, using, offering for sale, selling and/or importing Plaintiff’s CMDC device have at a minimum directly infringed the ‘287 patent and Google is thereby liable for infringement of the

‘287 patent pursuant to 35 U.S.C. § 271. Google have caused damage to Golden, which infringement and damage will continue unless and until Google is enjoined.

44. The alleged infringement of Golden identified in this Count has caused irreparable injury to Golden for which remedies at law are inadequate. Considering the balance of the hardships between the parties, a remedy in equity, such as a permanent injunction is warranted and such a remedy would be in the public interest.

COUNT II

(Infringement of the ‘439 Patent)

45. Golden realleges and incorporates herein the allegations set forth in Paragraphs 1-44.

46. On information and belief, Google is jointly, directly, indirectly and/or under the ‘doctrine of equivalents’, infringing at least independent claims 13, 14, 15, and 23 of the ‘439 patent. The alleged infringing products are: Google Pixel smartphones 3, 3XL, 3a, 3aXL, 4a, 4a(5G), and 5.

47. As set forth in Golden’s preliminary infringement contentions that Google is making, using, offering for sale, selling and/or importing Plaintiff’s CMDC device have at a minimum directly infringed the ‘439 patent and Google is thereby liable for infringement of the ‘439 patent pursuant to 35 U.S.C. § 271. Google have caused damage to Golden, which infringement and damage will continue unless and until Google is enjoined.

48. The alleged infringement of Google identified in this Count has caused irreparable injury to Golden for which remedies at law are inadequate. Considering the balance of the hardships between the parties, a remedy in equity, such as a permanent injunction is warranted and such a remedy would be in the public interest.

COUNT III

(Infringement of the '189 Patent)

49. Golden realleges and incorporates herein the allegations set forth in Paragraphs 1-48.


50. On information and belief, Google is jointly, directly, indirectly and/or under the 'doctrine of equivalents', infringing claims 1, 2 & 3 of the '189 patent. The alleged infringing products are: Google Pixel smartphones 3, 3XL, 3a, 3aXL, 4a, 4a(5G), and 5.

51. As set forth in Golden's preliminary infringement contentions that Google is making, using, offering for sale, selling and/or importing Plaintiff's CMDC device have at a minimum directly infringed the '189 patent and Google is thereby liable for infringement of the '189 patent pursuant to 35 U.S.C. § 271. Google have caused damage to Golden, which infringement and damage will continue unless and until Google is enjoined.

52. The alleged infringement of Google identified in this Count has caused irreparable injury to Golden for which remedies at law are inadequate. Considering the balance of the hardships between the parties, a remedy in equity, such as a permanent injunction is warranted and such a remedy would be in the public interest.

CLAIM CHART

53. The following Claim Chart is an illustration of literal infringement. At least one of the alleged infringing products of Google (i.e., Google Pixel smartphones 3, 3XL, 3a, 3aXL, 4a, 4a(5G), or 5) is representative of all the alleged infringing products of Google asserted in this complaint. At least one of the alleged infringing products of Google (Google Pixel 5) is illustrated to show how the Google Pixel 5 allegedly infringes on at least one of the asserted independent claims of each of the patents-in-suit ('287, '439, and '189 patents).

Google Pixel 5 Smartphone	Patent #: 10,163,287; Independent Claim 5	Patent #: 9,589,439; Independent Claim 23	Patent #: 9,096,189; Independent Claim 1
	A monitoring device, comprising:	A cell phone comprising:	A communication device of at least one of a cell phone, a smart phone, a desktop, a handheld, a PDA, a laptop, or a computer terminal for monitoring products, interconnected to a product for communication therebetween, comprising:
CPU: Octa-core (1 × 2.4 GHz Kryo 475 Prime & 1 × 2.2 GHz Kryo 475 Gold & 6 × 1.8 GHz Kryo 475 Silver) System-on-a-chip: Qualcomm Snapdragon 765G	at least one central processing unit (CPU);	a central processing unit (CPU) for executing and carrying out the instructions of a computer program;	at least one of a central processing unit (CPU) for executing and carrying out the instructions of a computer program, a network processor which is specifically targeted at the networking application domain, or a front-end processor for communication between a host computer and other devices;
Ambient Temperature sensor supported by the Android platform. Measures the ambient room temperature in degrees Celsius (°C). Monitoring air temperatures. Monitoring air temperatures.	at least one temperature sensor in communication with the at least one CPU for monitoring temperature;	X	X

Gravity sensor supported by the Android platform. Measures the force of gravity in m/s ² that is applied to a device on all three physical axes (x, y, z). Motion detection (shake, tilt, etc.).	at least one motion sensor in communication with the at least one CPU;	X	X
Light sensor supported by the Android platform. Measures the ambient light level (illumination) in lx. Controlling screen brightness. Screen: 6-inch flexible OLED display at 432 ppi	at least one viewing screen for monitoring in communication with the at least one CPU;	X	X
Connectivity: Wi-Fi 5 (a/b/g/n/ac) 2.4 + 5.0 GHz, Bluetooth 5.0 + LE, NFC, GPS (GLONASS, Galileo, BeiDou), eSIM capable	at least one global positioning system (GPS) connection in communication with the at least one CPU;	at least one of a satellite connection, Bluetooth connection, WiFi connection, internet connection, radio frequency (RF) connection, cellular connection, broadband connection, long range radio frequency (RF) connection, short range radio frequency (RF) connection, or GPS connection;	at least one satellite connection, Bluetooth connection, WiFi connection, internet connection, radio frequency (RF) connection, cellular connection, broadband connection, long and short-range radio frequency (RF) connection, or GPS connection;
Connectivity: Wi-Fi 5 (a/b/g/n/ac) 2.4 + 5.0 GHz, Bluetooth 5.0 + LE, NFC, GPS (GLONASS, Galileo, BeiDou), eSIM capable	at least one of an internet connection or a Wi-Fi connection in communication with the at least one CPU;	wherein at least one of... WiFi connection, internet connection, radio frequency (RF) connection, cellular connection... capable of signal communication with the transmitter or the receiver;	wherein the only type or types of communication with the transmitter and the receiver of the communication device and transceivers of the products is a type or types selected from the group... of satellite, Bluetooth, WiFi...

<p>Connectivity: Wi-Fi 5 (a/b/g/n/ac) 2.4 + 5.0 GHz, Bluetooth 5.0 + LE, NFC, GPS (GLONASS, Galileo, BeiDou), eSIM capable</p>	<p>at least one of a Bluetooth connection, a cellular connection, or a satellite connection in communication with the at least one CPU;</p>	<p>at least one of a... Bluetooth connection, WiFi connection, internet connection... cellular connection... short range radio frequency (RF) connection, or GPS connection;</p>	<p>X</p>
<p>Google's Android operating system features a lock mechanism to secure your phone, known as pattern lock. To set, drag your finger along lines on the screen. To unlock the phone, replicate the pattern drawn. If you fail to solve the pattern too many times, the phone locks and cannot be unlocked without logging into the associated Google account.</p> <p>Google Nest × Yale Lock is connected to the Nest app; you can lock or unlock your door from your phone.</p>	<p>at least one locking mechanism in communication with the at least one CPU for locking the communication device, the at least one locking mechanism configured to at least one of engage (lock) the communication device, disengage (unlock) the communication device, or disable (make unavailable) the communication device;</p>	<p>whereupon the cell phone is interconnected to the cell phone detection device to receive signals or send signals to lock or unlock doors, to activate or deactivate security systems, to activate or deactivate multi-sensor detection systems, or to activate or deactivate the cell phone detection device;</p>	<p>X</p>
<p>Pixel phones use USB-C with USB 2.0 power adapters and cables. To charge your phone with a USB-A power adapter, use a USB-C to USB-A cable.</p>	<p>at least one power source comprising at least one of a battery, electrical connection, or wireless connection, to provide power to the communication device;</p>	<p>X</p>	<p>X</p>

<p>BIOMETRICS: Biometric factors allow for secure authentication on the Android platform. The Android framework includes face and fingerprint biometric authentication. Android can be customized to support other forms of biometric authentication (such as Iris).</p>	<p>at least one biometric sensor in communication with the at least once CPU for providing biometric authentication to access the communication device;</p>	<p>wherein the cell phone is equipped with a biometric lock disabler that incorporates at least one of a fingerprint recognition, voice recognition, face recognition, hand geometry, retina scan, iris scan, or signature such that the cell phone is locked by the biometric lock disabler to prevent unauthorized use; and</p>	<p>wherein the communication device is equipped with a biometric lock disabler that incorporates at least one of a fingerprint recognition, voice recognition, face recognition, hand geometry, retina scan, iris scan and signature such that the communication device that is at least one of the cell phone, the smart phone, the desktop, the handheld, the PDA, the laptop or the computer terminal is locked by the biometric lock disabler to prevent unauthorized use</p>
<p><i>Android Team Awareness Kit, ATAK (built on the Android operating system) provides a single interface for viewing and controlling different CBRN-sensing technologies, whether that is a wearable smartwatch that measures a warfighter's vitals (e.g., heart rate) or a device mounted on a drone to detect chemical warfare agents.</i></p>	<p>at least one sensor for chemical, biological, or human detection in communication with the at least one CPU;</p>	<p>the cell phone is at least a fixed, portable or mobile communication device interconnected to the cell phone detection device, capable of wired or wireless communication therebetween; and</p>	<p>the communication device is at least a fixed, portable or mobile communication device interconnected to a fixed, portable or mobile product, capable of wired or wireless communication therebetween...</p>

<p><i>Android Team Awareness Kit</i>, ATAK (built on the Android operating system) is a digital application available to warfighters throughout the DoD. ATAK offers warfighters geospatial mapping for situational awareness during combat — on an end-user device such as a smartphone or a tablet. With DTRA's contribution, ATAK now includes chemical, biological, radiological, and nuclear (CBRN) plug-ins.</p>	<p>one or more detectors in communication with the at least one CPU for detecting at least one of chemical, biological, radiological, or explosive agents;</p>	<p>at least one of a chemical sensor, a biological sensor, an explosive sensor, a human sensor, a contraband sensor, or a radiological sensor capable of being disposed within, on, upon or adjacent the cell phone;</p>	<p>wherein the communication device receives a signal via any of one or more products listed in any of the plurality of product grouping categories;</p>
<p>Connectivity: Wi-Fi 5 (a/b/g/n/ac) 2.4 + 5.0 GHz, Bluetooth 5.0 + LE, NFC, GPS (GLONASS, Galileo, BeiDou), eSIM capable</p>	<p>at least one radio-frequency near-field communication (NFC) connection in communication with the at least one CPU...</p>	<p>X</p>	<p>X</p>
<p>Google Nest × Yale Lock is connected to the Nest app; you can lock or unlock your door from your phone.</p> <p><i>Android Team Awareness Kit</i>, ATAK (built on the Android operating system) provides a single interface for viewing and controlling different CBRN-sensing technologies</p>	<p>at least one of a transmitter or a transceiver in communication with the at least one CPU configured to send signals to monitor at least one of a door, a vehicle, or a building, send signals to lock or unlock doors, send signals to control components of a vehicle, send signals to control components of a building, or... detect at least one of a chemical biological... agent such that the communication device is capable of communicating, monitoring, detecting, and controlling.</p>	<p>a transmitter for transmitting signals and messages to a cell phone detection device; a receiver for receiving signals from the cell phone detection device;</p>	<p>a transmitter for transmitting signals and messages to at least one of plurality product groups based on the categories of a multi-sensor detection device, a maritime cargo container, a cell phone detection device, or a locking device;</p> <p>a receiver for receiving signals, data or messages from at least one of plurality product groups based on the categories of a multi-sensor detection device, a maritime cargo container, a cell phone detection device, or a locking device;</p>

<p>Google Nest × Yale Lock is connected to the Nest app; you can lock or unlock your door from your phone.</p> <p><i>Android Team Awareness Kit</i>, ATAK (built on the Android operating system) provides a single interface for viewing and controlling different CBRN-sensing technologies</p>	X	X	<p>whereupon the communication device, is interconnected to a product equipped to receive signals from or send signals to lock or unlock doors, activate or deactivate security systems, activate or deactivate multi-sensor detection systems, or to activate or deactivate cell phone detection systems</p>
<p><i>Android Team Awareness Kit</i>, ATAK (built on the Android operating system) is a digital application available to warfighters throughout the DoD. ATAK offers warfighters geospatial mapping for situational awareness during combat — on an end-user device such as a smartphone or a tablet. With DTRA's contribution, ATAK now includes chemical, biological, radiological, and nuclear (CBRN) plug-ins.</p>	X	<p>a transmitter for transmitting signals and messages to a cell phone detection device; a receiver for receiving signals from the cell phone detection device;</p>	<p>wherein at least one satellite connection, Bluetooth connection, WiFi connection, internet connection, radio frequency (RF) connection, cellular connection, broadband connection... short range radio frequency (RF) connection is capable of signal communication with the transmitter and the receiver of the communication device and transceivers of the products;</p>

<p><i>Android Team Awareness Kit</i>, ATAK (built on the Android operating system) is a digital application available to warfighters throughout the DoD. ATAK offers warfighters geospatial mapping for situational awareness during combat — on an end-user device such as a smartphone or a tablet. With DTRA’s contribution, ATAK now includes chemical, biological, radiological, and nuclear (CBRN) plug-ins.</p>	X	<p>whereupon a signal sent to the receiver of the cell phone detection device from at least one of the chemical sensor, the biological sensor, the explosive sensor, the human sensor, the contraband sensor, or the radiological sensor, causes a signal that includes at least one of location data or sensor data to be sent to the cell phone.</p>	X
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PRAYER FOR RELIEF

Wherefore, Golden respectfully requests that this Court enter:

- A. A judgment in favor of Golden that the defendant has infringed at least one or more claims of the ‘287 Patent, the ‘439 Patent, and the ‘189 Patent as aforesaid;
- B. A permanent injunction enjoining the defendant, its officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents and all others acting in active concert or privity therewith from direct, indirect and/or joint infringement of the ‘287, ‘439, and ‘189 patents as aforesaid pursuant to 35 U.S.C. § 283;
- C. A judgment and order requiring the defendant to pay Golden its damages with pre- and post-judgment interest thereon pursuant to 35 U.S.C. § 284;
- D. As set forth in Golden’s preliminary infringement contentions that the Defendant in this case is making, using, offering for sale, selling and/or importing the aforementioned

alleged infringing devices that have at a minimum, directly infringed the '287, '439, and '189 patents. The Defendant is thereby liable for infringement of the '287, '439, and '189 patents pursuant to 35 U.S.C. § 271. The Defendant has caused damage to Golden, which infringement and damage will continue unless and until the Defendant is enjoined.

E. Any and all further relief to which the Court may deem Golden entitled.

DEMAND FOR JURY TRIAL

Golden requests a trial by jury on all issues so triable by right pursuant to Fed. R. Civ. P. 38. A right guaranteed under the Seventh Amendment of the Constitution.

Respectfully submitted,

S/  Date: 01 /25 /2021

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